The MAC Flyer

SEPTEMBER 1978

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For Greater Safety and Efficiency
in MAC Air Operations

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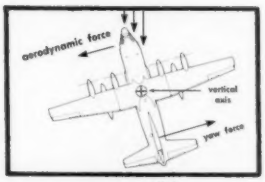

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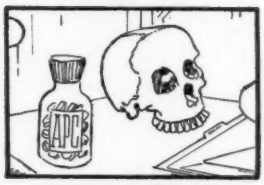

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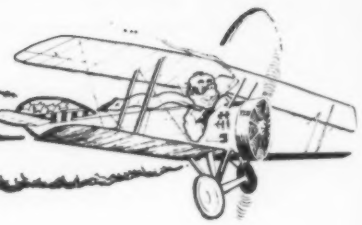
The Flying Circus



You say you're feeling low because your last landing was so bad even the copilot noticed? Or the last three-star you shot turned out to be two satellites and a weather balloon? You say that after your last checkride the flight examiner called in your squadron commander, the chaplain, and the guy from Ripley's *Believe It Or Not* to attend the debrief? Does your training folder look like the first three volumes of the Encyclopedia Britannica? Is that what's troubling you, Bunky?

Well, cheer up! "The Flying Circus" is back with a collection of aeronautical misadventures that'll make your last ADF approach look like a coupled ILS. We've got 'em from all over the world—a collection of goofs, giggles, pratfalls, and plain bad luck to lighten the heaviest heart. So put down that rusty razor blade and pay attention—cuz you ain't seen nothin' yet!

Glider A-Go-Go

A glider pilot was doing his thing (Note: Glider Pilots Do It Quietly) at about 3,000 feet over some nice flat terrain when he decided to adjust his variometer with a small screwdriver. In accordance with Murphy's Law, he dropped the screwdriver; and in accordance with the Law of Selective Gravitation, it wound up under the seat. He tried loosening his shoulder harness to get at it. No luck. The next step was to trim the sailplane for level flight, unstrap, and go after the elusive tool.

He got the screwdriver back and was just starting to reattach the harness when severe turbulence grabbed the glider and pointed it toward terra firma. The pilot got a glimpse of assorted stuff floating around the cockpit and grabbed franctically for the harness, but it was too late. He parted company with his trusty steed—through the top of the canopy.

Fortunately, he had a parachute on, but in the excitement he forgot just where the D-ring was located. He finally found it, pulled, and floated gently down from 700 feet while the topless glider soared in circles around him—inverted.

The pilot landed, uninjured, just yards away from the wreckage of the glider, heaved a large sigh of relief, and then glanced at his hand.

He was still holding the screwdriver.

Now Arriving In Gate Six . . .

If you've ever been qualified in more than one airplane, you'll sympathize with the plight of an airline pilot who faced a total brake failure while taxiing up to the gate in a Boeing 727. He was also current in Martin 404's and Fairchild F-27's, and when he realized what was going on he grabbed for the emergency brake handle—exactly where it would have been on the Martin 404. He realized his mistake, let go of a handful of air, and grabbed again. But this time his reflexes steered him to the parking brake location for the F-27.

He found the handle on the third try (directly in front of him

at eye level), but not before he found himself sharing the cockpit with a large section of the terminal building.

Step to the Back of the Bus, Please

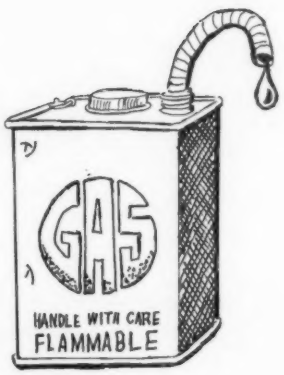
This one is a story of skill and cunning rather than screwups and bungling, but we thought it belonged here. It seems a light twin pilot heard a noise during gear retraction on takeoff, checked the wheels by means of a mirror on the inboard side of the engine nacelle, and saw the nose gear in an intermediate position. He tried putting it back down with both normal and emergency systems, but no luck. Then, to add to the confusion, all his radios quit. He was now roaming around the sky with the mains down, the nose gear unsafe, four passengers in the back, and no way to tell anybody about it.

The intrepid aviator solved the communication problem by flying over the airport and dropping a note explaining the situation. Then he tackled the gear problem. He moved all the passengers as far aft as possible, secured everything that was loose, briefed the pax on what to do after landing, and flew around for awhile to burn off most of his fuel. Then he brought the Cessna in for a landing as the fire trucks stood by.

The strategy worked. With the CG as far aft as possible and a light fuel load, the twin touched down on the mains and gently settled onto the tailskid. The pilot and pax deplaned and held the tail down until somebody could extend the nose gear. The only damage was to the disconnected nose gear door linkage which had caused the gear problem in the first place.

Planned to the Last Drop

A wise old philosopher once said, "I'd rather be lucky than



good any day." When a non-USAF helicopter ran out of gas as it was hovering into its parking spot, the audience probably figured the pilot was lucky. But 13 minutes later, another chopper was hovering into the same parking ramp—and it ran out of gas, too. Then, just to eliminate any possibility of coincidence, a third helicopter repeated the identical maneuver 14 minutes later.

All three of the fling-wings were from the same base. We don't know where that base is, but we do know one thing: They obviously teach their pilots how to plan their fuel to the last drop.

The Human Pyramid

Nobody likes a departure delay, and the airlines are no exception. As a DC-10 was pulling away from the departure gate, somebody spotted an open access panel and notified the airline office. They told the crew to bring the big bird back to the gate, where a pair of ramp servicemen would be standing by to close the panel.

As the servicemen waited, a radio-equipped airport authority car pulled up. The driver invited the ramp service guys to jump aboard and radioed the DC-10 to hold while they came out to close the panel. (Is this starting to sound like a six-colonel launch?)

The gleesome threesome pulled up beneath the big trijet. One of the trio climbed onto the car's roof while a second gave the crew a thumbs-up signal, meaning "No sweat, guys, we'll have you zipped up in a trice." Then he glanced back at his buddy on top of the car. Apparently everybody had forgotten just how tall a DC-10 is, because the would - be panel - closer just couldn't get close enough to do the job.

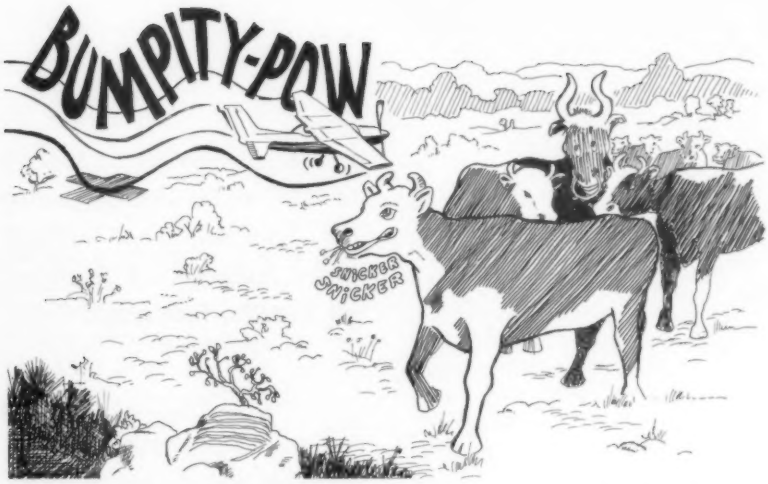
Being a man of quick decisions, the guy on the ground immediately climbed onto the car—and then onto his cohort's shoulders. This earned him an A in problem solving, but an F in judgment as you'll see in a moment.

Meanwhile, back in the cockpit, the crew had spotted the thumbs-up signal. However, they read it as: "Okay, good buddy, you are once more aerodynamically clean and prepared to proceed." So they did what came naturally. They called for taxi clearance.

The clearance came through as the human pyramid was being assembled underneath the airplane. When the trijet started to roll, the anchorman lost his balance and fell off the car. The troop on top hung onto the panel for a moment, swaying in the breeze, then thought better of it and dropped to the ground. The driver managed to abandon ship just before the DC-10's main gear flattened the car into a rather lumpy piece of PSP. Nobody was hurt, and the airplane wound up with only minor damage. The car? Well, we understand it's for sale—cheap.

The Last Roundup

In case you hadn't *herd*, there are places in the world where cowboys ride airplanes instead of broncs. Since it's hard to let out



a resounding "Yippie-aye-ay" when you're confined to the cockpit of a Cessna 150, warning horns are used to stir up the cattle and get them underway. They call it "cattle-mustering," but the principles are the same as back home on the range.

One of these airborne buckaroos, apparently minus his faithful Indian companion, was working a herd of cattle in thick scrub country. These seemed to be a bunch of those world-famous "contented cows," because the warning horns were having the same effect as a mild tranquilizer. So our flying cowpoke resorted to a trick which seems to enjoy some popularity among his peers. He made a low pass toward the blasé bovines, turning the Cessna's magneto switch off and on to make the engine backfire.

Shooting off a six-gun would have been a better idea. At about 50 feet in the air, the lock nut which holds the mag switch in place came loose. The switch promptly fell out of the panel, with the key out of the lock and the switch in the off position. The engine quit as the pilot started a steep climbing turn at about 60 knots of airspeed. He dumped the nose, shoved down the flaps, and managed to squeeze Ol' Paint into a clearing surrounded by brush, anthills, and trees. No damage to the airplane or pilot, but there's a rumor that several of the cows were overcome with laughter and had to be carried back to the corral.

Animals, Animals, Animals

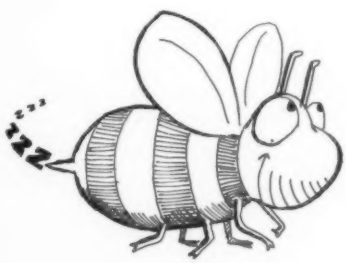
It's not only cows who give aviators some bad moments. Here's a collection of short items from various flysafe publications which illustrate the hazards of fooling with Mother Nature:

"Tail rotor attacked by boxer dog while running down following flight. Both damaged."

"Takeoff aborted due to lack of airspeed indication. During pitot tube replacement, several bees and a wasp flew out."

"Struck donkey during takeoff. Made emergency landing at Elborle where both engines struck the ground."

We're not sure there's a moral to these, but it might be a good idea to refrain from calling your airplane a dog.



Grand Finale

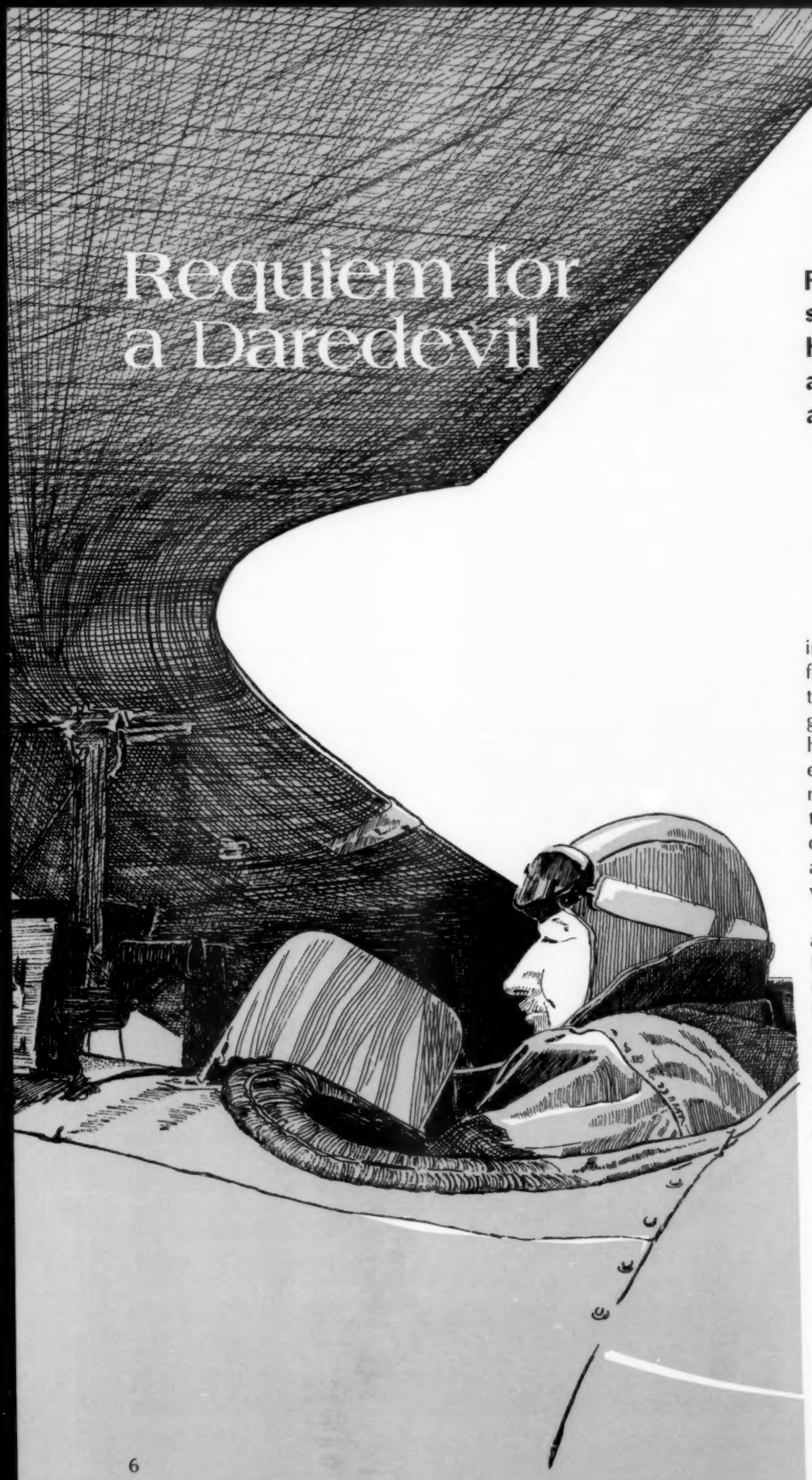
Sometimes, even when you do everything by the book, you're still wrong. During World War II, a bomber crew from England was on the way back from a night mission over the Continent. They'd been flying for some time when the pilot noticed he was holding a reciprocal heading and rapidly accumulating distance in the wrong direction. He turned around, not expecting to make it home but hoping to get at least as far as Holland before the fuel ran out.

The weather stayed bad, the night stayed dark, and when the petrol was gone the pilot made an excellent forced landing. The crew knew the consequences of abandoning an intact aircraft in enemy territory, so they took care to set fire to the machine. Then, with security preserved, they began to escape across the countryside.

They hadn't gone far when they came to a road, and then to a building. The building had a familiar look.

It was the neighborhood pub near their home base in England.

—Our thanks to the following publications from which we stole the material for this article: *British Airways Air Safety Review, Aviation Safety Digest, Crosscheck, U.S. Army Aviation Digest, Air Clues, The Journal of Air Traffic Control* and *Flight Safety Facts & Reports.*—Ed.



Requiem for a Daredevil

Frank Tallman crashed scores of airplanes during his lifetime and walked away from all of them — all but the last one.

by Maj James G. Gibson II
Supervising Editor

The sight of a daredevil aviator, his scarf trailing in the slipstream, his wire and fabric biplane careening through the air in seemingly impossible gyrations, has been one of the hallmarks of flying from its earliest days. Crowds of flyers and nonflyers alike have thrilled to the deeds of stunt pilots at outdoor airshows, in movie theaters, and during recent years on television.

Among the exponents of exotic aerial maneuvering, and particularly that rare breed that flies vintage aircraft, one name has been legendary with airshow enthusiasts, movie fans, and stunt pilots themselves for more than a quarter of a century—Frank G. Tallman. Martin Caidin, the dean of aviation writers in America, called him "perhaps the greatest showman of our time in the air."

During a flying career that began at the age of 16 when he soloed in his father's "Jenny," the 59-year-old Tallman logged more than 14,000 hours and mastered

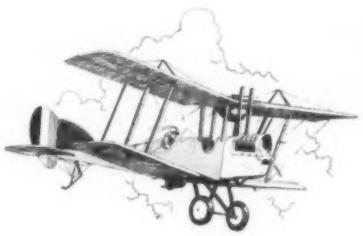
the controls of over 500 different types of flying machines—including just about every fixed wing plane ever designed, gliders, helicopters, and even balloons. He was a Navy pilot for 14 years before joining the ranks of stuntmen in the wake of World War II and teaming up with another top stunt flyer, Paul Mantz. The rescue of a beat-up 1918 Sopwith Camel from the junkpile in 1949 launched the two pilots on a campaign to save, restore, and fly as many historic and military airplanes as they could. The result was Movieland of the Air at Orange County Airport, California, where thousands of people come each year to see more than two million dollars' worth of vintage aircraft assembled into the world's largest collection of its kind.

Tallman was renowned for the most spectacular and daring stunts in the business, but he was by no means a flying fool. Any foolishness on his part would most certainly have been rewarded by serious injuries or an abbreviated career—the fate suffered by dozens of his less fortunate contemporaries.

Although there is no doubt that Tallman's performances were dangerous, the secret of his ability to walk away from battered airplanes was careful planning and meticulous preparation. He preferred to call his work "precision flying" rather than "stunt flying," and nobody could take issue with him on that score. Each aerial exploit was precisely calculated to produce the maximum amount of breathtaking spectacle with the minimum amount of risk to Tallman. Every factor, including structural limitations of the airframe, its handling characteristics and peculiarities, wind and weather conditions and numerous lesser variables were all taken into account down to a gnat's eyelash. As a result, even when the unexpected happened and things went worse than planned, there was always enough safety margin for Tallman to emerge from the wreckage, brush himself off, and press on to his next confrontation with the grim reaper.

Only once did he suffer what could be considered a serious injury in connection with his activities aloft, and that was a broken ankle sustained from a bad landing while he was skydiving. This mishap aside, Tallman remained virtually unscathed for more than three decades despite plunges through girder-rimmed billboards, splintering crashes into barns, and low-level dives under bridges. If you saw "The Great Waldo Pepper," "Catch 22," or "Murphy's War," you had the pleasure and excitement of watching Tallman at his best, because he did the unparalleled aerial sequences in these movies, as well as dozens of others.

Oddsmakers will tell you that if you do anything dangerous long enough and tempt fate often enough, sooner or later you'll get nailed. The odds ran out for Frank Tallman on 16 April 1978, but not in the way you might expect. He did die flying, but it wasn't while performing a dangerous aerial sequence—the way his partner Mantz had perished in 1965 when the featured airplane failed on takeoff during the filming of the "Flight of the Phoenix" and pancaked in the desert. No, the "precision flyer," who had intentionally crashed countless aircraft on cue and emerged without a scratch so many times, died on a routine business flight from Santa Monica back to Orange County Airport. He was alone in his twin-engine Piper Aztec, and the evidence indicated that he was jousting with a familiar pilot's nemesis—trying to remain VFR in IFR conditions. Picking his way along the coastline at about 1,000 feet, he tangled with a thunderstorm, and a lifetime of safely creating the illusion of aerobatic recklessness and abandon ended abruptly . . . against a California hillside.



Third Place, 1978 MAC Flying Safety Writing Contest

BERMUDA HIGH

by Maj J. Darrell Lindsey
155 TAS (ANG)
Memphis IAP, Tennessee

A long haul to Lajes was routine for Ol' Shakey, but this crew turned routine into something else.

"Well, Sunset Airlines is right on schedule," mused Capt Ben Baker, as twilight's last gleaming filtered softly into the flight deck of the C-124 clattering down Kindley's east-west. The wheels had just thumped into the wells when departure gave them a left turn out and unrestricted climb to 13,000. Nine hours at one-three-zero! Any other time, Baker thought, there wouldn't be even a seagull between Kindley and Lajes, but joint U.S.-U.K. naval exercises had all airspace below 12,000 reserved for 48 hours. Something to do with naval artillery and missile firing at undisclosed intervals along their route of flight, according to the briefing officer.

As he logged their takeoff time and went to work on the ETA data, Baker halfheartedly speculated that maybe things would improve as the mission progressed. Given the trend of things thus far, however, he honestly held little hope for anything but a humpbuster for the next five or six days.

Back at Dover, he had just finished rebuilding the transmission on his old Ford when the scheduling officer called and "requested" that Baker take a special mission to Rota—and be at operations in three hours. Waiting at Ops when he reported in were Capt Pete Delgado, first pilot, and the AC, Maj Carl "Sunset" Schultz, so named because he reportedly had never seen a runway in daylight. Trailing Baker by a few minutes was the co-driver, 1st Lt Randy Belcher.

"Here's the plan, folks," Major Schultz began his briefing. "We're gonna hop down to Norfolk, onload 15,000 pounds of Navy goods, and thence to Kindley for crew rest. At Kindley, we pick up a team of civilian technicians bound for Lajes. From Lajes, we press on to Rota, offload, and crew rest. Then, it's back to Lajes and home base."

The mission had progressed according to plan only briefly. A slight loading delay at Norfolk had cinched a night departure and put them into Kindley just after midnight. The crew managed to grab a few hours' sack time before the base stirred to life for a new day. Having found it impossible to sleep during the day, they had pursued the pleasures of Bermuda as best they could until alert time.

The base ops routine transpired smoothly enough, and following the flight line snack bar ritual the aviators mounted up for the long haul to Lajes—only to discover that Pratt & Whitney number two had developed an oil squirt. Shakey was showing her age again. Ramps were tramped and ETIC's slid, but eventually the right patches were put in the right places and a launch was accomplished.

Thirty-two minutes after lift-off, the aluminum overcast was level at 13,000 and racing east at 200 knots. Major Schultz repaired to the pilot's pallet, leaving Captain Delgado to gaze at the gauges. While MSgt Roy Oschner made a few delicate adjustments to the mills, Baker fired up another weed, logged a tacan fix, and started a precomp for his heading check. Except for the three on duty, all others on board had settled down for long siestas.

Fortunately, it was a beautiful night and there was practically no

wind—two factors which eased the navigator's labors, there being virtually no loran coverage along their route. They reported on course and on time at sixty west. After the airep, Baker poured more coffee for himself and Delgado, then leaned back for a few minutes' rest and a smoke.

Celestial conditions were excellent and the pressure pattern data supported Baker's cel work. Two hours and thirty-four minutes after departure, they reported fifty-five west, right on schedule. Everything seemed to be proceeding normally as the giant machine droned through the beauty of a clear Atlantic summer night.

The only little glitch was the growing fatigue as the night wore on. The three men on duty discussed it at intervals, agreeing that boredom and fatigue were part of the job, just something you had to live with at times. In their efforts to remain alert, Baker, Delgado, and Oschner consumed numerous cups of coffee and smoked enough cigarettes to ensure North Carolina's solvency for another year.

The passing of the fiftieth meridian having been duly noted, Baker made his umpteenth trip to the gentlemen's lounge at the rear of the aircraft. Returning to the flight deck, he was a bit surprised that he had to halt on the ladder for a few moments in order to catch his breath. Still a bit dizzy as he settled into the comfortable nav seat, he pulled the last cigarette from a pack and again considered his vow to slow down on the smokes.

Baker's attempts to locate Ocean Station Echo were fruitless, not an unexpected occurrence, since they were near the outer limit at which contact might reasonably be anticipated. His chances for successful contact would have been enhanced considerably, however, had he turned his ADF switch to the control position before tuning and had Delgado tuned the proper VHF frequency. Delgado also had begun to experience a slight but undetectable physiological deterioration. He did realize his error a bit later, though it was far too late to contact the boat.

Preparing for a fix at forty-four west, the navigator rolled the numbers into the sextant counters and peered into the eyepiece. The heretofore sharp images had become slightly blurred and he wondered how the instrument could have gotten itself out of focus between fixes. He plotted the LOP's on his chart, locating the aircraft position well south of his DR as a result of his having plotted a large intercept in reverse. Reaching up and grasping the N-1 compass synchronizer knob, he turned the heading pointer six degrees to the left, something he would not normally do.

Just as he removed his hand from the knob, Delgado asked about an airep. Baker went to work on the position report and passed it up to the pilot when they were about five minutes past the ETA. Although HF conditions were reasonably good at that point, Delgado was requested twice to repeat his transmission. He speculated to himself that those meatheads at MacDill must be half deaf, and the MacDill operator quipped to his supervisor that the guy on MAC 31042 must have been eating a banana while transmitting.

Baker then remembered having turned the aircraft with the N-1, and so informed the pilot. "Del, I turned us six degrees left." What the pilot heard was not what the navigator said, however, at least not all of it. An HF crackle had cut out the initial part of the nav's notice, and what Delgado thought he heard was, "Turn six degrees left." He rogered, reached for the autopilot knob, and very gently began to rotate it counterclockwise. The dashboard lighting appeared to be unusually dim and Delgado had to lean forward to count the ticks on the compass rose. Even so, he was unaware that he had overcorrected by a couple of degrees. The entire turn went unnoticed by the navigator, who had risen to get another cup of coffee and was experiencing some difficulty with his equilibrium.

The flight engineer, Sergeant Oschner, was not without his own problems. Like Captain Delgado, the FE was finding it increasingly difficult to read the myriad of dials and gauges before him. His panel lights were barely adequate, even with the rheostat rotated to full bright. Ordinarily somewhat of an extrovert, Oschner during the past couple of hours had lapsed into silence, speaking in barely intelligible monosyllabic tones and then only in response to direct stimuli. And now the bright green lines that flickered and darted across the analyzer were having a hypnotic effect on him.

What he really needed, reasoned the sergeant, was a few minutes' rest, just a few winks. Oschner folded his long arms on the table in front of him and leaned forward to rest his head on the pillow formed by his overlapping hands. As he shifted his arms about, seeking the position of greatest comfort, his arm nudged the numbers two, three, and four throttles, so softly and gradually that he felt nothing. It was enough, however, to effect a slight increase in power; enough

additional airspeed to cause the machine to enter an ascent of only a few feet per minute; and enough asymmetry to create a tendency for the airplane to travel a very gentle northerly scalloped path, subject, of course, to the vagaries of the old autopilot.

After several determined attempts, Baker had finally succeeded in lighting another cigarette, albeit the fire had contacted the thing about a third of the way from the tip. As he sat and puffed, his gaze inadvertently focused on the flight plan and in particular upon the estimate for forty west. He stared at his Glycine for a few moments, eventually realizing that it was time for the airep. Baker scrawled the numbers on the airep form, duplicating the wind data from the line above and using ETA's from the flight plan. He had not gotten a fix during the past hour.

"Airep, Del."

Delgado couldn't hear the nav, however. A few minutes prior to Baker's call, he had removed his headset in order to rest for a moment. Baker slowly looked forward and saw the pilot's head, sans earphones, tilted against the headrest. Deciding to make the report himself, he rotated the wafer switch to HF 1 and began calling MacDill. It was just as well that Baker elected to make the position report, since he was the only one who could have read the scribbled figures on the paper.

The young airman at MacDill Airways who took Baker's call had just come on duty. He managed to read the aircraft identification and "forty west," attributing the remainder of Baker's garbled and slurred transmission to poor atmospheric conditions. Following a couple of unsuccessful attempts for repeats, the lad signed off with instructions to report at three-five-whiskey. At that moment, the Globemaster was sliding by thirty-eight west at 13,800 feet.

Major Schultz neither smoked nor abused his body and brain with strong drink and was a firm believer in the value of physical fitness and proper rest. He awoke from a deep sleep, breathing rapidly and deeply, yet unable to satisfy the need to fill his lungs. Looking at his watch, he quickly calculated that they only had about two and one-half hours more to Lajes. He would apologize to Delgado for having slept so long, he told himself as he pulled on his boots, still breathing heavily.

As the AC began to move forward through the dimly lit flight deck, his eyes riveted on Sergeant Oschner, his upper torso still sprawled over the table. The engineer appeared entirely too relaxed to have just assumed such a position within the past few minutes. A look of incredulity flashed across Schultz's face as next he saw the navigator slumped in his seat, sound asleep, mouth agape. It was obvious that Delgado, too, was resting in the arms of Morpheus with only his lap belt keeping him from falling to the floor. A Teutonic rage began to well up within the aircraft commander as he stood contemplating the three dozing crewmembers.

Major Schultz initiated a brisk move toward the pilot's seat but halted in mid-step as he took a second look at Baker. The navigator's face was slightly flushed, but what really caught the AC's eye was the strange bluish-purple color of the man's lips. Schultz's eyes darted to the altimeter on the navigator's panel just as the pointer was creeping past 14,900 feet.

Thousands of miles away in a suburb of Phoenix, an amateur radio operator was introducing his young son to the mysteries of the airwaves. The father ambled out to the kitchen for a couple of cokes, giving the boy permission to twist the tuning knob of the big radio.

The lad looked up as his father came back into the room. "Daddy, what does 'Mayday' mean?"

A look of unmistakable concern came into the man's eyes. "Son, did you hear somebody say 'Mayday' over the radio?"

"Yes, sir. Somebody named Mac said it three times."

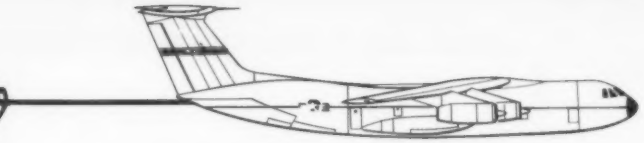
"Did anybody answer him?"

"Not at first, but then somebody named Larges answered. That's a funny name, isn't it, Daddy?"

ABOUT THE AUTHOR

Major Lindsey started his military service as an Air Force Reservist in 1963. He later transferred to the Mississippi Air National Guard while he finished his bachelor's degree at Mississippi State University. He was commissioned in 1965 and awarded his navigator wings in 1966. Since then, he's navigated C-121's, C-124's and C-130's. Currently an instructor navigator, Major Lindsey won an honorable mention in the 1977 writing contest.

Flight Lines



Eye of Hawk, Ear of Pachyderm . . .

I am a flying safety officer from the Chinese Air Force, Republic of China, and I was training in the United States at McChord AFB, Washington.

I would like to address my deep appreciation to all the professional people in the Military Airlift Command who so freely contributed toward my formal education and so very much enhanced my understanding of the MAC system.

As you say, flying safety is a team effort, just like a chain. No one can be an exception. So, a flying safety officer is not a "desk jockey." He must have the eyes of a hawk and the ears of an elephant so that he can pass information to the people and tell them how to do the job safely . . . and bring back suggestions to the commander.

If I may now be permitted to borrow a bit from Chinese philosophy, "A man who is engaged in flying safety—his work carries with it a kind of moral obligation."

I would again like to say thank you. You can be very proud of the performance of your people.

Maj Chien-Chih Chen
Flying Safety Officer
Chinese Air Force

★ Thanks for the good words and the nugget of Chinese philosophy. If we may borrow a bit from "southern hospitality," it was nice to have you in our country for a visit and y'all come again anytime.

A Striking New Acronym

In your April issue "After Deadline "you mention the advantage of a new system for forecasting the probability of lightning strike in Europe. In actual fact, the forecast is for the Probability of Lightning Conditions (POLC). A briefing of 100 percent POLC actually equates to a 1-to-2 percent probability of lightning strike when flying under these conditions.

SSgt Stephen J. Ricci
Det 17, 31 WS
RAF Upper Heyford, England

★ Right you are, Sergeant Ricci, the correct term is Probability of Lightning Conditions. But our weather wizards tell us that, in actual fact, a 100 percent POLC has worked out to be about a 2-to-4 percent chance of an aircraft's receiving a high-voltage surprise when flying in the probability area. Judging by the lightning strike reports that have been coming in lately, however, it's a good idea to stay as far away from thunderstorms or questionable cloud formations as you can . . . regardless of the percentages or probabilities.

Premature Retirement Announcement?

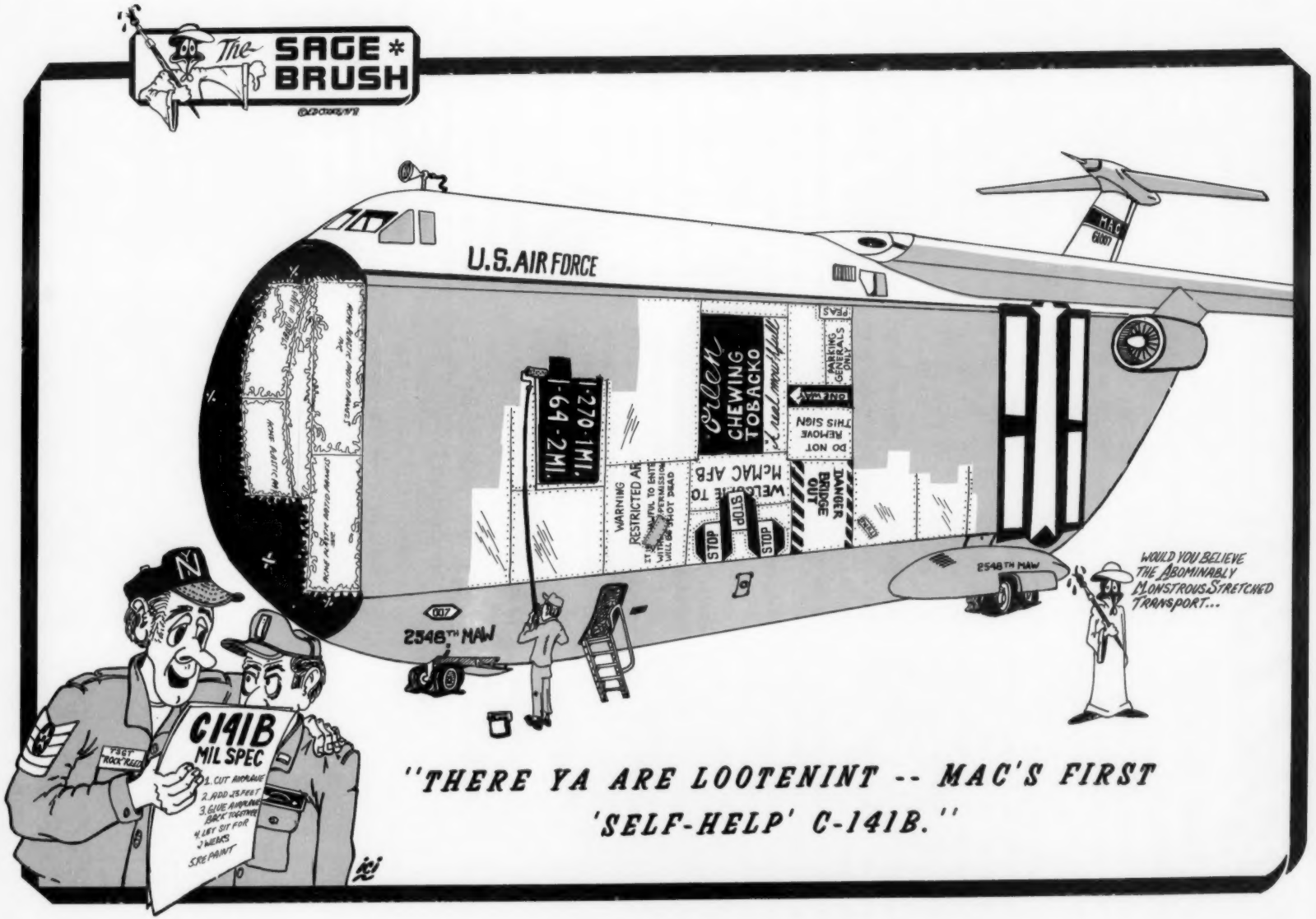
We in the 915th Airborne Early Warning and Control Group (AFRES) and Det 1, 20th Air Defense Squadron (ADCOM) strongly resent the implication in the May "Airlift Legacy" that the C-121 Super Constellation was retired in 1966 (unless, in fact, we did not get the word).

In 1966 we were just barely getting started in the Southeast Asia conflict and were not recalled until May 1974. During that time we flew nearly 99,000 combat hours controlling more than 20,000 friendly aircraft over enemy territory. Our EC-121's were credited with 3,297 MiG warnings and assisted in 25 MiG kills.

The aircraft assigned to the 915th here at Homestead include two C-121G models and nine EC-121T models. Enclosed is an EC-121T photo. With the coming of the E-3A "AWACS," the Super Connie will bow out of the Air Force inventory, but the date will be 1978—not 1966.

Capt Claude H. Stewart
AEW&CG/OI
Homestead AFB, Florida

★ To paraphrase Mark Twain, our report of the Super Connie's disappearance from the Air Force inventory was somewhat premature. Our apologies to you folks and your hard-working 121's, and thanks for giving us the word that you're still alive and active in the land of sunshine and oranges.


The SAGE * BRUSH
U.S. AIR FORCE
M.A.C.
1-270 1MI.
1-64 2MI.
Erlen CHEWING TOBACKO
I real mean it!!
PEAS
PARKING GENERALS ONLY
AVIANO
DO NOT REMOVE THIS SIGN
WARNING RESTRICTED AR
WELCOME TO McMAC AFB
STOP
STOP
INNER BRIDGE OUT
2548TH MAW
2548TH MAW
WOULD YOU BELIEVE THE ABOMINABLY MONSTROUS STRETCHED TRANSPORT...
C141B MIL SPEC
1. CUT AIRFRAME
2. ADD 15 FEET
3. GLUE AIRFRAME BACK TOGETHER
4. LET SIT FOR 3 WEEKS
5. PEE PAINT
"THERE YA ARE LOOTENINT -- MAC'S FIRST 'SELF-HELP' C-141B."

Understanding Fin Stall

The Hercules is a forgiving airplane, but if you push it too far it can turn on you.

It's a cool autumn afternoon, the wind is calm, and the sky is clear—a good day to go fly. Even the 20 airborne troops in the cargo compartment haven't complained much. You line up on the active as number six in the nine-ship serial. The airplanes in front of you roll at regular 15-second intervals. Your navigator counts down, ". . . five, four, three, two, one, roll!"

You drop your heels to the floor and the C-130 accelerates smoothly. The controls become effective; you take the yoke and rotate on schedule. Just as the main tires leave the ground you hit the wake of the five Herks in front of you. Your 130 is tossed wildly to the right. You counter with full left aileron and rudder. The turbulence whips the wings back level, so you counter with right aileron and keep the left rudder in to maintain heading—number seven is close behind. The cross-controlled cargo plane yaws sharply to the left. You see the runway-remaining markers out the copilot's swing window. Full right aileron isn't stopping the turn and the nose is trying to come up. You're barely 20 feet above the grass to the left of the runway; the airspeed drops a few more knots and, as the wings stall out, the Herk gives a last sickening buffet. It's the end.

If you're lucky, you'll experience something like this only in your worst dreams—or maybe in the simulator—where you'll have time to ask, "What happened?" But one crew wasn't that lucky several years ago. Investigators believe that fin stall led to their fatal accident. Fin stall became big news and the Lockheed engineers and TAC fly-safe folks hit the road with a briefing for all C-130 flyers. For awhile the troops were up to speed on fin stall, some good words were added to the Dash One, and the problem seemed well in hand.

But times—and people—change. Any instructor will tell you that you can't teach the lesson just once; there's always the new guy who didn't get the word. With a lot of those new guys flying the brown-and-green these days, it's time for another look at the C-130 fin stall phenomenon. To comprehend fin stall we have to understand two things: torque effect and rudder aerodynamics.

Torque Effect

The prop slipstream over the wings creates additional lift — the more power, the more lift. How-

ever, the lift is unequally distributed spanwise along the wing as shown in figure 1. With the extra lift goes extra induced drag, so there's more total drag on the left side of the Hercules than on the right.

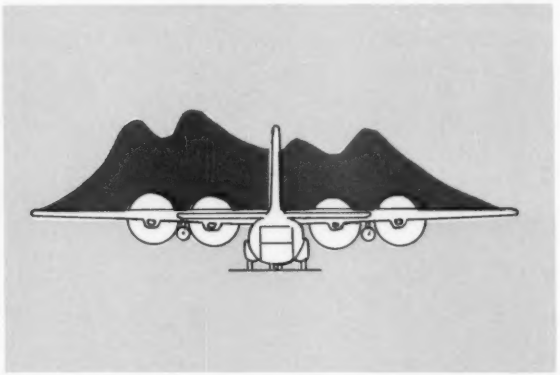


Figure 1. Power-on spanwise lift distribution.

This is known as torque effect. At high power settings, the left wingtip appears to be pulled aft. Right rudder counteracts the torque effect for straight, power-on flight. To keep from wearing out your right leg, you use rudder trim which holds the rudder deflected to the right. Therefore, more rudder authority is available for left yaw.

Rudder Aerodynamics

Moving back to the tail, we'll address some basic aerodynamics and show how misusing the rudder can get you in trouble. For our examples we'll talk about left rudder producing left yaw and right sideslip. The relative wind always comes from a direction opposite to the aircraft's flight path, regardless of *indicated* heading or attitude.

When you feed in the rudder, the airplane yaws —no surprise. The air pressure against the fuselage forward of the vertical axis tends to force the yaw angle to increase (figure 2). For directional stability, something has to push the back end the other way, or you'll soon have to open the ramp to see where you're going. Here's how it works.

The vertical stabilizer and rudder form an airfoil. When you first deflect the rudder to the left, the relative wind must travel farther on the right side of the fin, producing a low pressure area on that side. The resultant force to the right yields left yaw (figure 3).

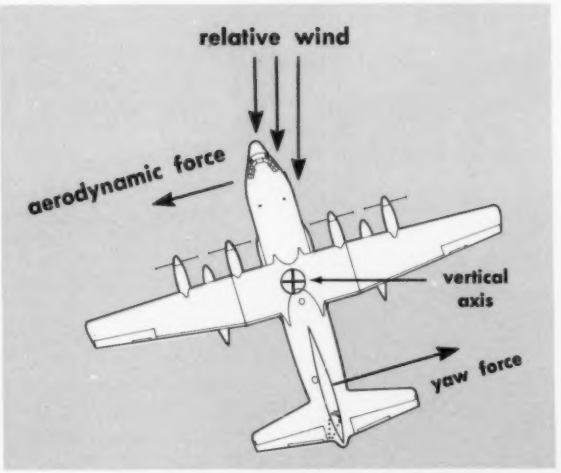


Figure 2. Aerodynamic forces about the vertical axis at the start of a sideslip.

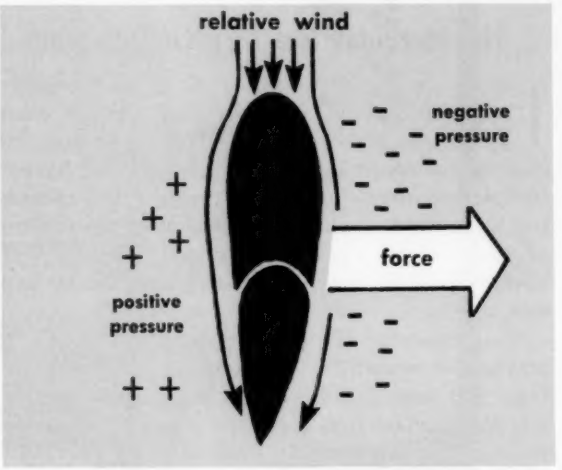


Figure 3. When the rudder is first deflected, the fin generates aerodynamic force that yaws the aircraft.

As the aircraft continues to yaw left, the fin's angle of attack increases enough so that the relative wind must travel farther along the *left* side of the tail, and the low pressure area and force vector shifts to that side (figure 4). This tends to equalize the forces about the vertical axis, so the yaw and sideslip angles won't increase. If the rudder is now moved back toward neutral, the forces again become unbalanced and the yaw decreases.

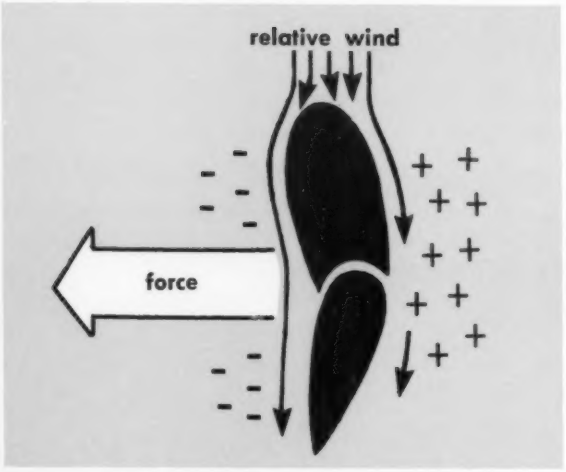


Figure 4. As the sideslip angle increases, the aerodynamic force moves to the other side of the fin and balances the airloads forward of the vertical axis.

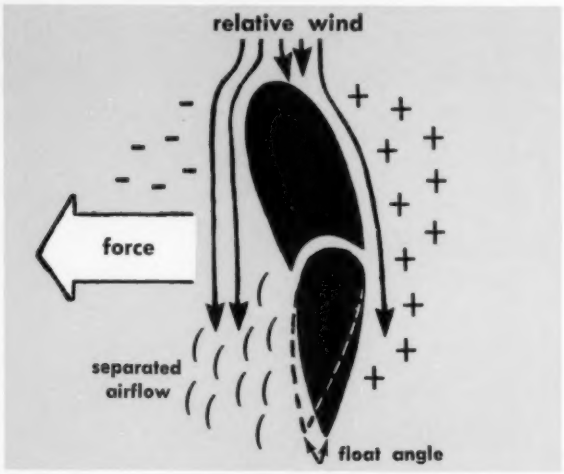


Figure 5. If the sideslip angle increases far enough, the airflow begins to separate and the fin stalls. The sideward force balancing the airloads on the side of the forward fuselage lessens and the aircraft yaws still further.

If you keep feeding in rudder, bad things can happen. As the fin's angle of attack increases, the airflow begins to separate from the left side (figure 5), and the fin starts to stall.

With the fin stalling, the props also begin to make their contribution. First, the rudder floats to a greater deflection angle because of the unbalanced pressures, the effectiveness of the vertical tail decreases, and the torque effect increases the sideslip angle. At this point the rudder is aerodynamically locked. It won't return to neutral if released, but it can be forced back with 50 to 100 pounds of rudder-pedal pressure. If allowed to go unchecked, the Herk's slideslip angle will stabilize at 40 to 45 degrees because of the barn-door effect of the airframe—airplanes just aren't designed to fly sideways.

Fortunately, the situation isn't unsalvageable, if you have the time and altitude. About anything the pilot does to reduce prop wash and increase airflow over the tail will straighten the 130 out. Forcing the rudder back toward neutral is tough, but it works. So does lowering the nose and reducing the power.

Finding Fin Stall

Fin stall is hard to find. It's important to emphasize that fin stall will not occur due to turbulence, crosswind landings, or normal engine-out maneuvers. Usually the pilot must force the airplane into it, but it could possibly result from a mechanical failure in the flight control system.

There are two ways to do a sideslip. One way is to push in the rudder and keep the wings level with aileron. The second is the wing-low crosswind landing technique required to land the Herk. In either case, *normal* control inputs won't cause a fin stall. Even full rudder applied slowly at speeds above 1.2 times power-off-stall speed won't get you into trouble (approach speed is calculated at 1.35 times power-off-stall speed). However, abrupt full rudder to the left or right can cause fin stall — it's just a little easier with left rudder (remember, the power has got to be set for level flight or more, since the torque effect contributes significantly to yawing the airplane). The most likely places to get into a fin stall are engine-out go-arounds and formation flying.

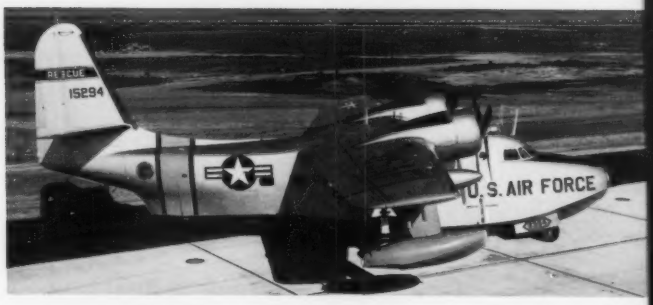
Remember that you can recover from fin stall if you have the time and altitude. But you also will need the margin of knowledge about the airplane that can give you the capability to get things straight again.

H-21 Workhorse

The Airlift Legacy

The Vertol H-21 first flew in 1952 and joined the Air Rescue Service inventory in 1953. It was Rescue's largest helicopter at the time, with a 44-foot rotor span and max gross weight of 15,000 pounds. The Workhorse could carry 20 passengers or 12 litter patients, had a 600-mile range, and could stay airborne up to seven hours with auxiliary tanks.

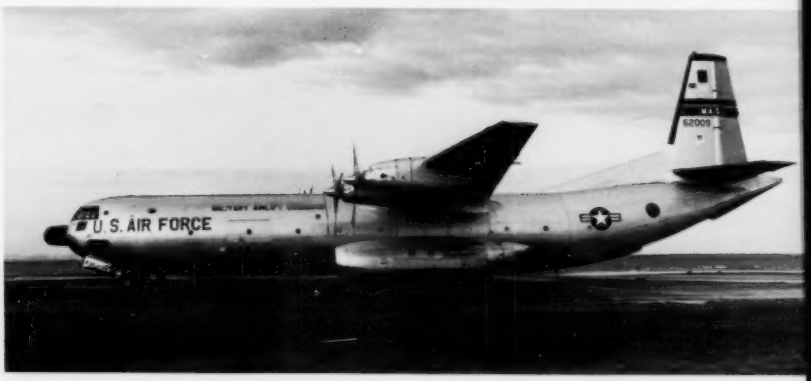
The H-21's twin rotors were driven by a single Wright R-1820-103 recip engine, giving it a top speed of 110 knots and a ceiling of 20,000 feet. A later model, the H-21D, was powered by two General Electric T-58 turbines and had greatly improved performance; but newer turbine helicopters proved to be still better, and the Workhorse was put out to pasture in 1965.



People, places, and planes often look best in the mirror of memory. Take a nostalgia break and join a former MATSman as he remembers . . .

The Good Ol' Days

by Maj Breckinridge S. Smith
Det 4, 1401 MAS
Barksdale AFB, Louisiana



Flying the line in MATS (MAC's predecessor) was often a solo effort. You were assigned an aircraft to keep for the duration and sent in a general direction toward an uncertain destination. You wore a ball patch and had a per-diem stripe on your aircraft. The proverbial plastic spoon was always in your flight suit pencil pocket (to distinguish us from the fighter jocks). Filing with the Transport Control Center was brief and you probably rubbed elbows with your Navy partners who were driving Super Connies. You were your own separate entity, trusted to get the job done, often using your own resourcefulness and ingenuity. If you were sent to Southeast Asia to pick up a water buffalo, you were the one that figured out how to get it back alive.

You crew-rested at Hickalulu and watched the movie in the rain. Crew rest at Wake was unforgettable and was often an exercise in futility. Remember the old Wake resort on the *other* side of the island with wooden quarters next to the runway—and the C-124's running up during the night? How about the solar hot water system, or the Pan Am crews? How about the collection of aireps under the glass at the weather station that were works of art created by forgotten aviators who transited Wake many years before you discovered it? I wonder what happened to the antique adding machine that the loadmasters used in the flight planning room?

On to Tachi, check into the BOQ, suits on—the civilian club awaits. Twenty-four hours to six days later, laden with goodies, you're prepared to make your way back across the pond. You always landed at Midway at two in the morning. Why were the Navy's power carts so quiet and the Air Force's so noisy? A sleepy Navy clerk was there along with the weather-eaten beer machine and the salt water showers. Midway, with its gooney birds; it was hard to get sun on the beach because the goons would land on your body. The goons that made every takeoff interesting.

Finally, the long drive to Travis with the sun in your eyes and the forecast of the dreaded fog that was always there. The hours of trying to get the HF to channelize and using AM for position reports. Never seeing another airplane. Your navigator getting his last good loran "A" fix, and the many hours with pressure pattern and sunlines and possibly a noonday fix. The navigator's personal pride in making the US AD!Z on course, on time. Customs at Travis was a second lieutenant with a clipboard.

Home for three days crew rest and back to the squadron to initial the CIF, get your shot and find out who you'll be teamed up with for your next trip.

And don't forget . . . the MATS Pilot's Code, aircraft commander's badge, Navigators' Protective Association, Engineers' Union, Loadmasters' Society . . . the approach plate inventory, TCC, 2H2, drift meters . . . Ocean Station November, Wahini Kapua, stews, landfalls, Drifter's Reef, liar's dice . . . Marcus, A-14, Tachi, balloons, 24-hour turnarounds, pachinko machines, butterflies, A-3 bags, hibachis . . . APS-42, single-heading flight plan, sextant dome, aural null . . . Midway Radar, Navy flight lunches, mechanical stage, great circle, triple one . . . Farallons, squadron mail boxes, *esprit de corps* . . . all part of the "System" in the "good ol' days."

Wings, Wizards an

by Sammy Mason

(Adapted for *TMF* by Capt James P. Coe)

An old-head aviator tells how superior skill and cunning can be overcome by bad planning and bad judgment.

I stood in the grass near the runway watching the spot landing contest. The lightplane pilots were aiming for a line painted across the runway just beyond the numbers, and several had come fairly close. A red and white Cessna was now on downwind for his shot at winning the prize. The pilot pulled the throttle to idle and I watched his pattern toward the target. When he turned from base to final, he was obviously too high. He slowed the airplane by pulling the nose up and the descent angle steepened. It was still apparent that he was going to overshoot, so he pulled the nose up even higher, violating everything sacred to safety. His genius for converting lift into a plummeting descent was outstanding. It appeared that he might at least come close to the target. He was low enough that I could see the set of his jaw and I imagined crosshairs on his glazed eyeballs as the plane dropped rapidly toward the mark.

The landing gear tried to cushion the crunch, but it spraddled with an indecent shedding of aluminum garments into a shameful heap. I ran to offer assistance, but found two healthy people, although the dazed pilot seemed a bit crestfallen. His disappointment was centered on missing

the target, instead of the fact that he had just bent his airplane.

This incident is an example of poor judgment—the kind of situation caused by a pilot not properly ordering his priorities. When people are unable to place things into proper perspective they can become a hazard to themselves or others. They may be highly skilled, even extremely smart, but something happens to them that short-circuits their ability to see things as they really are. In a similar way, pilots are sometimes struck with moments of insanity that temporarily paralyze their judgment. You may be a wizard at the art of flying but if you can't put things in their proper perspective, you're probably heading for an accident.

We all acknowledge that safety has priority over most things. Why, then, do low-priority items so often lead to an accident? The desire to get a contract signed over at Fogville, a compulsion to get home in spite of a strange-sounding engine and bad weather, or the temptation to show the boss you can descend lower than minimums and get him to that important meeting are low-priority reasons for flying. A conscientious pilot will not permit demands of such minor importance to compromise his basic desire to fly safely.

There is a tendency to equate the ability to make good decisions with some unrelated qualities such as IQ. I know some very smart people that were involved in flying stupidly, so it isn't mental voltage that determines the use of judgment.

Whether we are wizards or just ordinary folks though, our ability

d Wisdom

to make good decisions should improve with experience. As a young and inexperienced aviator, I impulsively blundered into more than one hair-raising adventure. Now as I view the same situations through bifocals under thinning gray hair, I have insights that provide barriers against foolishness. I'm sure that frequent doses of substantial fright had much to do with changing my attitude toward flying. The most important change was my development of a more thoughtful attitude.

The cool head who does everything right when the serpents of disaster are coiled for a strike has probably conditioned his decisive powers through a thoughtful attitude. As a flight instructor, I try to pass on as much of my experience as possible to my students. We practice simulated emergencies that can be done with a reasonable margin of safety, but I can only carry those simulations so far. Beyond that line of safety I encourage pilots to think about potential hazards and emergencies and try to visualize what they would do—the thoughtful attitude. Flying is a thinking person's game. The unimaginative pilot is potentially dangerous because he can't visualize the results of his decisions.

Unfortunately, some employers fail to understand that a pilot needs plenty of time to think about everything relating to flying. The boss who expects a pilot to work too much at nonflying tasks is pouring sand into mental machinery that should be geared for the realm of flight. Ideally, a pilot should approach the aircraft with nothing on his mind but getting to his destination safely.

We have little difficulty, in a routine environment, keeping our minds working as they should; we perform all of the normal cockpit duties with skill and efficiency. But when we are forced out of our usual pattern, we must be alert for deficiencies in our performance. Let's look at an example.

Once I was asked to fly a high-ranking foreign air force official from Burbank to Palmdale in a light twin-engine aircraft. I was told to show him extra courtesies and consideration. When I met him, he immediately informed me that he was a great pilot, and questioned my qualifications. I assured him I could not match his ability and changed the subject. After the runup, I called the tower and was "cleared on to hold." As I swung onto the runway, Generalissimo Ego shoved both throttles to the wall and declared, "I fly!"

The unimaginative pilot is potentially dangerous because he can't visualize the results of his decisions.

I subdued my rage, forgot about the tower's instructions to hold, and tried to keep this maniac from busting the airplane. When we reached the intersection of the two runways, another airplane flew over the top of us and the tower reminded me that I was only cleared to hold.

Accidents are often the result of cockpit surprises that cause our thinking processes to quit functioning. These intruders take many forms: attitudes, pressures, emergencies, emotions—anything that's not part of the routine.

A major deficiency that often contributes to aircraft accidents is failing to take enough time for complete preflight planning. A dramatic personal example of how haste makes waste occurred at an airshow at the old Curtiss-Wright airport on Long Island.

Our airshow troupe had been pushing a front all the way across the country from California and we had frequent delays because of weather. I was first to arrive—about 15 minutes after showtime. The promoter started prodding me to get into the air. One of my acts consisted of a rocket-assisted takeoff. The rocket bottle was already fastened to the belly of the 450-horsepower Stearman and all I had to do was hook up the ignition wire.

With everything connected and ready, I quickly taxied the biplane to the runway and, without a moment's hesitation, took off. When I felt control effectiveness,

I detonated the rocket. The airplane jumped ahead with a tremendous surge and I jerked the Stearman into a vertical climb. Then, at about 200 feet, the engine quit—cold.

The rocket's location caused the airplane to arc toward the inverted position. I shoved the stick full forward but the reaction was too powerful to overcome. Suddenly the airplane snapped into a wild, inverted gyration and settled into the dense column of rocket smoke. With the nose now pointing toward the ground, the engine restarted. Using both rocket and recip power, I regained control and pulled the airplane from the dive as details on the ground rushed sharply into focus. I fully expected to crash and, but for the grace of God, I would have.

The cause of this near-disaster was my forgetting to turn on my all-attitude fuel system prior to takeoff. When the stuntplane was pointed straight up, the gravity fuel system failed and the engine quit. Perhaps readers are not as fallible as I am—it's my nature to hurry. But when I'm around an airplane, I need the self-discipline to slow down—to protect myself from myself.

Some pilots seem to have an intuitive ability to sense trouble and avoid it. This intuition is probably nothing more than an appreciation of what's taking place around them. For example, while walking to the airplane on a hot day at a remote airport, you note the softness of the asphalt. Not a breath of air is stirring; the pressure altitude and the temperature are high. A look at the performance data shows that the runway is just long enough.

You fire up the turbines and watch the starting temps closely. It takes a bit more than normal power to taxi as the airplane rolls slowly on heavy, sticky tires. The air conditioning ducts are fogging profusely and spitting snow.

With everything checked, you start a turn onto the runway and observe the windsock at the takeoff end is hanging limp while the one at the other end is indicating about 15 knots and swinging wildly. You look at the hill about a mile off the departure end of the runway and observe dust spilling down the slope toward you. You shake your head and announce, "We're going to wait a few minutes."

"Why?" asks your copilot.

"Something tells me I should," you answer.

Perhaps without realizing it, in a few moments you had evaluated many factors that could not be readily measured, such as pressure altitude, humidity, rolling friction, and windshear. After waiting a few minutes both windsocks indicate about 15 knots of wind blowing down the runway. Now you take off safely.

Experience and training are the keys to developing judgment. Every mission and every aircraft can teach you something—if you remain alert enough to see it. Most of us avoid certain areas of flight and often we should do exactly that. There is a tendency, however, for us to establish too much of a buffer zone between what we consider hazardous and safe. This decreases our proficiency for handling situations which aren't routine. Training missions allow us to challenge our abilities—to make a "safe" mistake—and force our minds to work under pressure. Getting the most out of a training mission builds both skill and judgment.

An honest self-evaluation is very important, but difficult to develop. It's often harder to say, "I'm not qualified to fly that mission," than to bet your life by taking the flight. The adage that there are no old, bold pilots is not true, because I know some; but none lack humility.

When the next accident occurs, the next life is lost, it will be one of us. We will be intercepted by some circumstance that short-circuits our wizardry and causes us to perform as fools. Eighty-five percent of all aircraft accidents are caused by human factors. So it seems obvious that we are potentially defective and need as much working in our favor as possible.

One of the reasons most of us choose to fly airplanes is because there is an element of risk involved that challenges us. Make no mistake about it, despite technological innovations and better aircraft performance, the risk and the challenge are still with us and will continue to be there in the future.

—Courtesy of *Flight Operations*

ABOUT THE AUTHOR

Mr. Mason has a broad background of experience covering 44 years as a pilot and over 29,000 flying hours. He worked for Lockheed for 22 years as an engineering test pilot and was the first person to do aerobatics in a helicopter. He now owns and operates an aerobatic flying school in Santa Paula, California.

Iwakuni MCAS

Japan

(Elevation 8 feet)

*Deja Vu**

*(day-zha-voo), [Fr. lit., already seen], the illusion that one has previously had a given experience.

Flying into Iwakuni, which is located about 375 miles southwest of Tokyo on the southern coast of Japan, isn't too tough in the daytime—but night or bad weather can make a big difference. The only precision approach available leads to runway 01 (8,000 by 150 feet). It's a PAR with a 3.25-degree glide slope. There's no ILS or VASI and the entire final approach is over water, so the "black hole" illusion is very pronounced at night. Runway 19 has high-intensity runway lights, but no approach lights or other landing aids.

The terrain at Iwakuni isn't especially tall, but it's close. You're heading right for it when you're on base or dogleg to PAR final, so take heed of the note that prohibits flying west of the 200-degree radial of the Iwakuni tacan. Visual and circling approaches must be made to the east, over water.

A profusion of smokestacks marks an industrial area one mile north of the field. If you're taking off to the north, you'll need to make a right turn to avoid this area.

—Adapted from ISD-Q6-469

View of the MCAS ramp in the foreground and the city in the background. Extra care is required when maneuvering on Iwakuni's ramp and taxiways.

One-half mile on final for runway 01. Note the smokestacks and mountains in the background. The seawall in the foreground is ten feet high.

Runway 19 as seen from final approach. There are no approach aids or approach lights for this runway.

The World's Greatest, feeling the world's worst, checks in with the fly-doc and leaves with an unexpected prescription.

(first of two parts)

Awakening with a growing awareness that the usual amount of post-mission sack time had failed to restore him to fighting trim, the Beleaguered Barnstormer pried his eyelids apart with pudgy knuckles and did his best to greet was what left of the day. A sharp shaft of sunlight penetrating the semidarkness of his bedroom caused him to wince as his orbs slowly began to uncage and focus.

"If I had been out partying last night and having fun, I could understand why I feel like I've been groped by a grizzly bear," he pondered to himself in the bathroom mirror. "But when I got back from that local yesterday, I laid down for a catnap and that's the last I remember." His first painful attempt to swallow and his aching joints gave C.R. a quick clue as to what his problems might be.

"Fantastic!" he growled as he tried to numb his painful gullet with a gold-ringed Egyptian Oval. "I spend the whole day yesterday shooting approaches in lousy weather and now I'm gonna get to spend what's left of my crew rest under it."

Having perused the pile of raggedy 1972 issues of *Ladies Home Journal* and an equally outdated copy of the *Beekeeper's Gazette* while he waited for his 1430 appointment with the flight surgeon, the Feverish Flyer was feeling increasingly worse and more than a little weak. Finally C.R. heard his name called over the paging speaker, which told him to report to Doctor Caduceus in room 3.

"Gloryoskies, Major, you really look terrible," beamed the bright young Marcus Welby of aerospace healers as C.R. slumped into the chair across from his desk. "What seems to be the problem?"

"You're the doc, doc," quipped the Below-par Pilot, "so why don't you tap my kneecaps and stick funny gizmos in my orifices and use some of that medicine man savvy of yours to tell *me* for a change?"

As soon as he had sufficiently jolted the fast fading C.R. with a cold stethoscope and gagged him with tongue depressors a couple of times, the post pubescent prober was ready to make a pronouncement on the avoirdupois aviator's condition. To heighten the suspense, however, he retreated behind his desk and began writing in the Corpulent Commander's matching medical records. C.R. felt himself sinking even lower as he struggled back into his uniform while the captain-type doctor continued to

scribble furiously. Finally the Terrorific One's curiosity overcame the natural reticence he felt around doctors and lawyers and his voice anxiously pitched an octave above normal, he blurted, "Okay, Doc, what is it? What's going on inside my body beautiful?"

"A lot of things that shouldn't be, and not many of the things that should be," replied the disciple of Hippocrates without even slowing the travel of his ballpoint across the last bit of space at the bottom of what was now taking on the proportions of an article for the *AMA Journal*.

"As a matter of fact," he continued, "I'm admitting you to the hospital so we can run some tests, watch you for a few days, and see if we can't get your batteries back up to peak charge. You look like you're right on the verge of—"

"Now wait a minute, Doc," interrupted C.R. as visions of a very lonely weekend in a variable-pitch hospital bed filled his overtemped brain, "can't you just give me some Dimetapp and antibiotics like you guys always do for the crud and let me recuperate on DNIF in the comfort of my own apartment for a few days?"

"Sorry about that, sir," returned the unflappable fly-doc, "but as I was about to say, you look like you might be on the verge of mononucleosis, and we can't afford to take any chances since you also have signs of strep throat. Come along with me while I get Airman Crabbe to fill out the paperwork and we'll have you bedded down upstairs in no time and on the road to recovery."

"Don't I even get one phone call before you incarcerate me for an undetermined period of time?" pleaded the Sickly Skipper, adding, "after all, I did have some first class assignations lined up for the weekend and they're about to go down the tubes."

"No problem," said the surgeon for surly bond slippers as he handed C.R.'s overgrossed folder to Airman Crabbe. "You can make your call from my office and when you're done, I'll walk you upstairs to Ward 2 and introduce you to Captain Brunhilde, the chief nurse. Believe it or not, her specialty is backrubs for bedridden sufferers such as yourself."

With his weekend officially out the window and all concerned parties of the opposite sex duly notified, C.R. resigned himself to what lay ahead and joined Doctor Caduceus for the journey upstairs.

"So . . . this is Captain Brunhilde . . ." the Limpid Lothario mused to himself as he scanned the unbelievable expanse of white polyester solidly supported by two white-stockinged cedar posts planted in thick, crepe-soled, white low-quarters.

"Welcome to Ward 2," tinkled the tiniest voice C.R. had ever heard as Nurse B. tossed him a size extra-small hospital pajama shirt with no buttons and an extra-large bottom with a tiestring on one side only. "There's a bath off your room where you can change," she said, "and as soon as you're all tucked in, Lieutenant Ivy will be along with a nice I.V. so we can start restoring those

precious bodily fluids of yours."

"Lieutenant Ivy with an I.V.?" puzzled C.R. to himself as he headed for the bathroom to swap disguises. "On top of everything else I'm in real danger of being punned to death in this crazy place."

No sooner was the Pernicious Pilot in the prone position and about to doze off than an undernourished apparition with acne materialized next to his bed. Making a rather astute deduction from the fact that the brown bar in white fatigues was loaded down with a huge bottle of clear liquid and an assortment of tubes and needles, C.R. led off weakly, "You must be Lieutenant Ivy."

"Yes, sir, that's me," chirped the brand-new, one each, USAF, male nurse. "And I'm here with some glucose goodies for you. Just give me a minute or two to get you plugged in," he rattled on as he went about the task of locating a suitable spot to intercept a vein.

"You had better get it right the first time, m'lad," warned the uneasy Terror, his eyes clamped shut in anxiety as he felt the rough rub of the alcohol pad on his forearm. "I don't like needles even a little bit."

"Not to worry, not to wor-ry," came back a cocky reassurance from the penetrating lieutenant. "I've done this a million times on oranges and grapefruits and it always works perfectly," he added with a practiced laugh.

C.R. felt a stab of pain and cranked his eyes shut a couple of notches tighter. "I'm glad that's over," he sighed with relief as the pain subsided.

"Not so fast, Major," came back the now very busy butterbar—with no noticeable decrease in cockiness. "I didn't get it in that time because your doggoned ol' vein collapsed on me. But don't worry, I'll get that little bugger this time for sure," he chattered as he continued to poke and prod.

"Argh, argh, and triple argh," grunted C.R. to himself as he felt the repeated jabs. With each erroneous puncture, his breathing rate increased to match the speeded-up tempo of his heart. "Come on and get this over with, Lieutenant," he moaned just before Ivy finally hit the mark.

"There, all done," exhaled the lieutenant, who had already unclipped the pincher on the tube leading to Terror's arm and was intently regulating the steady drip, drip of the I.V. fluid. Flushed with having succeeded in his battle against Terror's flaccid vein, Ivy decided to press on with a bit of hospital humor. "That wasn't so bad, was it, sir? It's a shame we didn't have any vermouth for your—"

"Fan-tastic, Lieutenant, just fantastic. Now take your wretched jokes and leave me to suffer in peace," said C.R., who now opened his eyes for the first time since the ordeal had started. Just as the inept lieutenant was about to depart, the Weakened Warrior spied the bloody mess the novice needler had made of his arm, and his heart began pounding like a jackhammer all over again. "Boy, do I feel strange," he gasped. "I think my ticker is gonna come right through my ribs."

"I'd better check this out," said Ivy, making a fast break through the door to grab the portable EKG unit. The traumatized Terror had calmed down somewhat by the time the lieutenant came back, lugging a large electronic box and trailing a tangle of wires behind him. Quickly strapping the probes to C.R., he watched noncommittally as a little paper tape with squiggly lines emerged from one side of the machine. After a few minutes he ripped off the tape, unstrapped the still slightly palpitating pilot, and departed without so much as a "by your leave."

His final reserve of strength sapped by the ordeal of the I.V., C.R. quickly drifted into the Land of Nod. He was just about to make up for some of his forthcoming lost weekend in an unusually wild and crazy dream when he was shaken awake; the face of Doctor Caduceus stared intently down at him. "Are you all right, Major Terror? How do you feel?" the doctor asked in quick succession.

"Well, I was doing pretty good there for a minute until you woke me up," the Hyperactive Hallucinator responded sluggishly.

"No, I mean your heart, your heart," the flight surgeon insisted.

"My heart feels fine. Now please let me continue with my dream," said the Sleepy Skipper before it dawned on him what Caduceus was really asking. "What do you want to know about my heart for, doc?" asked C.R., suddenly coming to a realization of what was going on and trying to sit up in bed.

Sensing the major's apprehension, the medical man's tone became uncomfortably reassuring. "There's absolutely nothing to worry about; you just had a little episode of irregular hearbeat. I only came in to make sure everything was okay. You seem to be fine, all things considered, so don't worry about a thing."

"Irregular heartbeat . . . don't worry . . . what does this all mean, doc?" The Anxious Aeronaut was wide awake and sitting bolt up-

right in anticipation.

"Relax, Major Terror," soothed the aerospace healer as he whispered a message to Nurse Brunhilde, who had slipped into the room a few moments earlier. "I'll leave a prescription for something to help you get back to sleep, and maybe if you're a good major, Nursie here will give you one of her famous backrubs to relax you. And remember, now don't worry about a thing."

"Sure, doc, sure," mumbled C.R. with absolutely no conviction at all in his voice. A few minutes later, as he gulped down the harmless-looking little two-tone capsule Nurse B. handed him, he regained some of his composure and prevailed upon the massive massager to manipulate his corpulent clavicles and surrounding flesh.

"Be gentle with me," he teased weakly as he waited for the dynamic digits to descend on his sacroiliac. But the soporific bullet did its work speedily, and the magnificient major was out like a light before the bohemian Nightingale could lay a finger on him.

The next afternoon, Doctor Caduceus popped in on the still recumbent but slightly rejuvenated C.R. wtih some good news and some bad news. The good news was that the prolific partygoer didn't have mono or strep after all; he was generally rundown and suffering from a vague virus.

"But the bad news," explained the doctor, "is that your little episode of irregular heartbeat with Lieutenant Ivy was serious enough to raise some questions about your cardiac condition. The fancy name for what happened is an atrial fibrillation, and in order for you to continue as a good risk, healthwise, for flying, you've got to undergo a complete medical evaluation."

"But I just had my annual poke and prod session a couple of months ago here and everything was A-okay," interjected the astounded aviator.

"Major, there are physicals and there are physicals. We're setting up an appointment for you at the School of Aerospace Medicine in San Antonio, and I guarantee that any resemblance between physical exams you've had in the past and what you will be getting at Brooks is purely coincidental. Quite frankly, sir, having them check you over and receiving a clean bill of health for a waiver is the only way you have a prayer of remaining on flying status after that atrial fib'."

Seeing he had been outflanked by fate and the medical fraternity, the Raucous Rationalizer immediately went to work trying to make the best of a bad bargain. "Well . . . I certainly don't want to spend the rest of my Air Force career, such as it is, flying a desk someplace," he returned—already contemplating a Mexican food orgy in the Alamo City. "So sign me up for your biggie, doc. And by the way, I feel a whole lot better, so can I get a kitchen pass out of this place or do I have to while away the whole weekend in your overgrown infirmary?"

"I'm afraid you're stuck with us for the duration, sir," said the bearer of mixed medical blessings. "I'm going to keep you on the I.V. for a little longer to get your blood sugar headed back toward normal, and I need to watch you for a couple of days just in case that atrial fib' was something more than a false alarm. You haven't been giving your well-worn body much of a break lately, and it shows; so lie back, relax, and recharge your batteries courtesy of Uncle Sam."

Doctor Caduceus was hardly out the door when Nurse B. appeared to see how her Debilitated Driver of Aerospace Hardware was doing.

"Feeling fine," replied the Glucose-Propelled Pilot to her Tinkerbelle-voiced inquiry about his status. "But tell me one thing, you overwhelming purveyor of TLC, did I enjoy my rubdown yesterday?"

(Next time: C.R. gets the ultimate flight physical from the Boys in Blue at Brooks.)

Quick Stoppers

Oh, Hail

Despite an aircrew's best efforts, they sometimes get into situations where there's no good way to turn. Here's the story of a CT-39 crew faced with both mechanical maladies and bad weather. The tini-liner was level at FL 390 and accelerating to cruise speed when the pilots noticed the cabin altitude slowly rising. As the indicator passed 10,000 feet they donned oxygen masks and started an emergency descent. When the Sabreliner approached a cirrus undercast, the pilot asked ARTCC if there were any storm-cell echoes in the area. Center said they didn't see any on their radar.

Passing FL 230 the mini-jet encountered turbulence and icing. Guessing that the Center's radar hadn't seen the big picture, the crew requested a one-eighty. During the turn they ran into hail, severe icing, and turbulence; but with their options running out, they continued the descent. They popped out of the bottom of the clouds at about 8,000 feet and diverted to the nearest airfield for an uneventful landing. The CT-39 had been in icing for ten minutes and in hail for two; damage cost was over $27,000.

Stall and Fall

Most MAC flyers associate stalls and falls with little airplanes. But they can happen to big ones, too, as an airline crew recently demonstrated to their passengers.

Using the autopilot, the captain eased the 727 smoothly into the holding pattern at FL 310. He reduced power to get holding airspeed, 220 KIAS. The airspeed began dropping—and continued to drop as the jetliner headed outbound. As he moved the turn knob to start inbound to the fix, the captain noticed the airspeed passing 198 KIAS. Power was advanced slightly, but about that time the airliner started to buffet and the stick shaker activated. The captain disconnected the autopilot and lowered the nose, and the copilot astutely told Center the flight was departing its assigned altitude. During the ensuing stall and recovery, the airspeed went as low as 157 knots and the trijet descended to FL 245. Two of the engines stalled, but didn't flame out.

Fortunately, there wasn't any conflicting traffic below the hapless airliner and nobody was seriously injured during the 6,000-foot surprise descent.

—Adapted from *Crosscheck*

Things That Go Thump in the Flight

The crew leveled the Starlifter at FL 310 and a couple of minutes later were startled by a loud thump and the illumination of the door-open light on the annunciator panel and the in-transit light on the copilot's side panel. The cabin pressure held for a few seconds and then decreased slowly, so the pilot started an emergency descent. A scan of the pressure door showed it was open about three inches. At FL 200, the pressurization system could hold the cabin altitude at 9,000 feet. Without warning, the pressure door closed and locked by itself and stayed that way for the rest of the flight.

Ghosts, gremlins, Martians? Nope. Just a failed hook assembly on the door that had allowed it to open in flight. When the pressure differential had decreased enough, the door slammed shut.

Jolly Gyration

Helicopter pilot or not, put yourself in this Marine pilot's seat and get ready for a wild ride. As the AC started an approach for landing with a load of cargo and pax, he heard a loud "frump" from the back of the CH-53. The helicopter started an uncommanded right turn that left rudder wouldn't stop. Suspecting tail rotor failure, the pilot lowered the collective. He was right; a witness on the ground later reported seeing the tail rotor stop as the chopper began to rotate. Just before impact, the right-seater pulled in full collective to cushion the crunch. The four crewmembers and five passengers received minor injuries, but the Super Jolly didn't fare as well. An upper-ramp-door-actuator attachment had failed, poked into the tail-rotor-drive-shaft alley, and scored the drive shaft causing it to shear. The wounded 53 ended up with a collapsed tail pylon and the main transmission sitting on the cabin floor.

Twice Burned

After a demanding flight the Galaxy crew was glad to begin the engine-shutdown checklist, but they weren't allowed to relax for long. The scanner excitedly reported smoke coming from the number one engine tailpipe. The AC initiated the checklist for engine fire on the ground, but the smoke continued. He promptly discharged both fire bottles into the offending turbofan and that seemed to do the trick.

Maintenance folks checked the engine and found no fire damage. They reserviced the jet with ten quarts of oil and ran it up to check for leaks. Nothing appeared to be leaking and there was no fire after engine shutdown, so they certified that the engine was ready to go again.

The C-5 departed on time the next morning, but the crew decided to take it back home after an hour because of fluctuating oil pressure on number one and the loss of several navaids. Since this was the same crew that had experienced the tailpipe fire the day before, they suspected the worst and invited the fire department to attend their engine shutdown. This time the scanner reported heavy smoke and flames coming from the number one engine. The crew took care of their emergency procedures and egressed while the firefighters thoroughly hosed number one. Fortunately, the flames were confined to the tailpipe area and the fanjet was undamaged.

The cause of the entire episode was a hard-to-find oil leak in the engine—thus supporting the altered aphorism, "Where there's smoke there's fire—usually."

Qs

Thoughtful Throttles

It's not often you find an airplane that demonstrates maneuvers on its own initiative, but a 141 crew discovered one that had its own ideas about throttle technique. As the left-seat pilot taxied the gray-and-white onto the runway, he felt the throttles nudge his hand forward. He checked to see if his co-jock had his paw on the power levers—but he didn't have. When he stopped the airplane, the strange pressure disappeared so he decided to try the takeoff.

When the pilot released brakes and the right-seater tried to set the throttles to takeoff EPR (1.74), the throttles pushed back with about 30 to 40 pounds of pressure. The EPR dropped to 1.60, and the pilot rejected the takeoff.

Back in the chocks, the maintainers found the problem: some of the black boxes were thinking without permission. A stuck electrical relay in the autothrottle system allowed it to engage with the system turned off.

Dangling Door

Just after takeoff the Herk's door-open light illuminated. The flight engineer put on a restraining harness and went back to check things out. It looked like the crew entrance door was the culprit. Assuming that the microswitch was out of adjustment, the FE secured the door with a tiedown strap and returned to his seat. Soon the navigator spotted the crew entrance door beginning to open. The slipstream grabbed the door, broke the strap, and slammed it down to a vertical position.

The aircraft commander declared an emergency and returned the fractured Hercules to the departure base. A flyby damage check showed no significant airframe alteration. Number three engine was shut down and the crew took the 130 to the local jettison area to get rid of the unwanted appendage. Good idea, but the dangling door wouldn't come off despite several attempts to free it with the door-jettison handle. When the handle broke, it seemed the only choice might be to grind off the crew entrance door during landing.

The crew decided to try and at least get the door up to a horizontal position. With a lot of ingenuity and courage the loadmaster and engineer tied the winch cable and a tiedown strap together, routed the strap over the door eyebolts, and reached out and hooked it to the forward side of the door. Using winch power they got the door up to within six inches of the closed position. The Hercules landed safely with no additional damage to the door or airframe.

A maladjusted door rigging and a loose handle caused this one. The exterior handle had dropped a little too much when the door was closed and airloads during flight caused it to unlatch the door just enough for the slipstream to catch it.

Notable Quote

How come man blames fate and others for accidents, but feels personally responsible when he makes a hole-in-one on the golf course?

—Crosscheck

After Deadline

WATER AND AIRCRAFT FUEL are not a good mixture for a CT-39A, and an engine flameout after departure from a Pacific en route stop provided proof positive. Nobody caught an excessive amount of water in the fuel system during refueling, and it drowned out number two engine shortly after the bird took off. The incident could have been avoided by more careful adherence to tech order procedures.

NORFOLK NAS RUNWAY is being revamped, and as a result it has been shortened considerably at both ends for landings and takeoffs. Watch notams and other flight publications and advisories for the latest status of Norfolk's airdrome.

"DROPWINDSONDES" ARE LITTLE cylinder-type gizmos that four specially equipped C-141's will begin releasing in flight next year. They are designed to help gather increased weather data according to Lockheed-Georgia, who just received a $400,000 contract to modify the quartet of Starlifters. The program is being conducted in conjunction with the National Oceanic and Atmospheric Administration as part of its commitment to the Global Atmospheric Research Program.

WE GOOFED IN JULY. TMF accidentally credited Capt Richard P. O'Dell with an honorable mention in the 1978 MAC Flying Safety Writing Contest. The real author of the prize-winning article, "A Matter of Teamwork," is 1st Lt Gerard D. Hicks, Det 24, 40 ARRS, Fairchild AFB, Washington. Our sincere apologies to both Lieutenant Hicks and Captain O'Dell.

HOW WOULD YOU LIKE to come out to fly after an RON at an austere forward operating base and find your air machine missing? That's what happened to an aircrew which failed to chock the wheels of their helicopter for an overnight sojourn on a slanting ramp. The brakes bled off and let the helo tiptoe down the tarmac into a patch of tire-chewing terrain. Make sure your aluminum pony is well hitched before you leave it unattended.

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"Never mind him, ace. We're an endangered species on an official migration route, and we've got the right o' way."